

Work Order ID 140835

Wednesday, January 20, 2016 9:50:58 AM

140835

Page 1

Item ID: D2966-1-BENT

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube Assembly 105

Start Date: 1/20/2016 Start Qty: 2.00

P 3 *SA*
Q 3

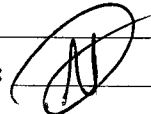
Cust Item ID:

Required Date: 2/5/2016 Req'd Qty: 2.00

Customer:

Reference:

Approvals:

Process Plan: 

Date: 16-1-20

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D2966

Rev B

120

0.00

120

CNC Bend 1

CNC Delta 100 Bender

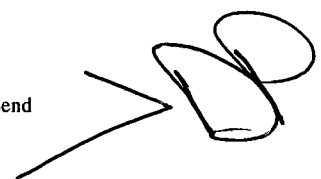
BENDING MACHINE - SKIDTUBES

Memo

0.00

1-Bend tube as per program BO105 on CNC Bender and Dwg D2966. Bend folio #1 use bending aid DT9631

2-Cut Fwd end of the tube using DT8185-1

 16-2-25 (3)

150

0.00

150

QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

3  16-2-25 BE

300

0.00

300

Packaging

Packaging

Identify as per dwg & Stock Location: _____
Packaging

Memo

0.00

LOCATION: LG002

 16-2-25 (3)

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

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Wednesday, January 20, 2016 9:50:58 AM

140835

Page 2

Item ID: D2966-1-BENT

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Skidtube Assembly 105

Stop ***NS2***

Start Date: 1/20/2016 Start Qty: 2.00

2

Cust Item ID:

Required Date: 2/5/2016 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
310	QC21- Final Inspection - Work Order Release	0.00							
310									
QC	Memo	0.00							
Quality Control									

MCS FEB 26 2016

MCS FEB 26 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
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Description Work Order Deviation				Disposition					
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		OTHER : ☐							

Picklist Print

Wednesday, January 20, 2016 9:51:02 AM

Page 1

Work Order ID: 140835

140835

Parent Item: D2966-1-BENT

D2966-1-BENT

Parent Item Name: Skidtube Assembly 105

Start Date: 1/20/2016

Required Date: 2/5/2016

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP rev A 10.09.17 New issue EC verified by:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2962-150		Manufactured	No				Each	75.0000		2			
D2962-150									**				
3.540 Outer Tube, Extrud													

Location

Loc Qty

Loc Code

HALL

75

132753

70

90871

5

3

16-2-25

DQA: _____ Date: _____

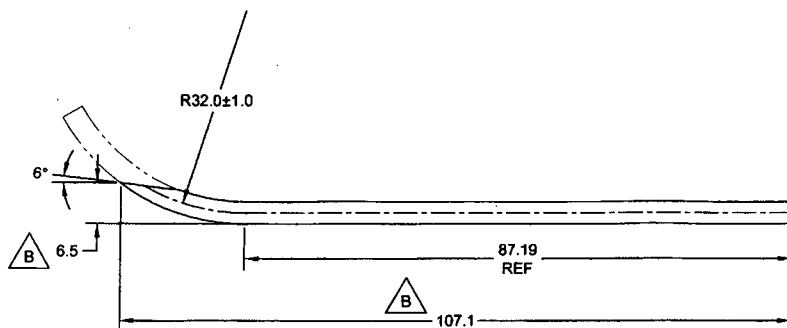


WORK ORDER NON-CONFORMANCE / UPDATE

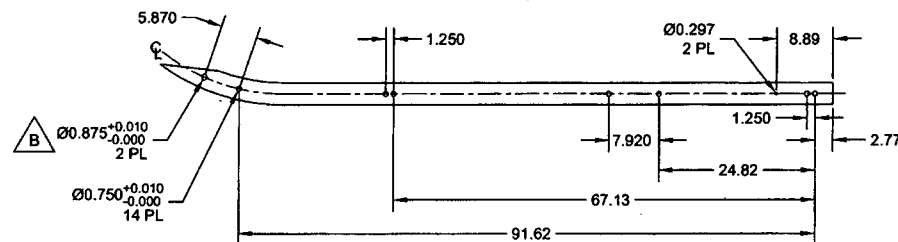
QA Closed: _____ Date: _____

Work Order update only ☐

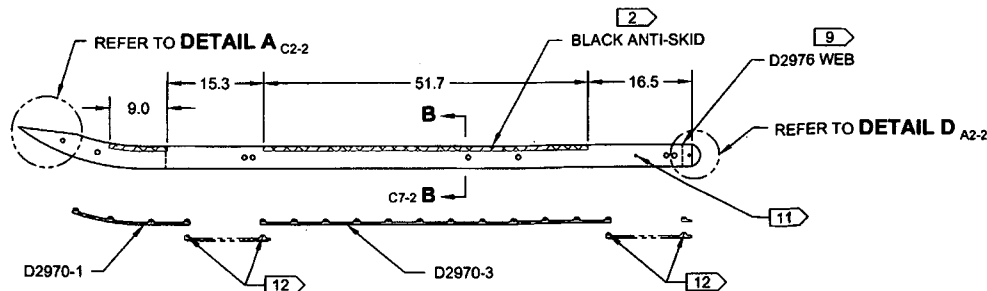
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D2966-1 BENDING/CUTTING DETAIL
(MAKE FROM D2962-125 EXTRUSION)



D2966-1 DRILLING DETAIL



D2966-041 ASSEMBLY DETAIL

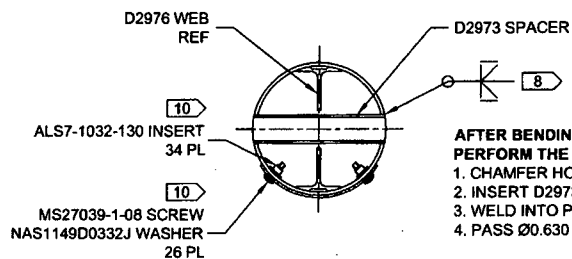
ITEM	QTY	PART NUMBER	DESCRIPTION
	X	D2966-041	SKIDTUBE ASSEMBLY
1	1	D2966-1	TUBE
2	1	D2964	CAP
3	1	D2965	CAP
4	1	D2970-1	WEARPLATE
5	1	D2970-3	WEARPLATE
6	1	D2971	CROSS BOLT SPACER
7	7	D2973	CROSS BOLT SPACER
8	1	D2976	WEB
9	1	D3176-1	BUSHING
10	1	D3176-3	NUT
11	36	ALS7-1032-130 or ALS4-1032-130 or AKS7-1032-130 or AKS4-1032-130	INSERT
12	26	MS27039-1-08	SCREW
13	2	MS27039-1-08	SCREW
14	28	NAS1149D0332J	WASHER

RELEASED
11 2014-02-03

NOTES:

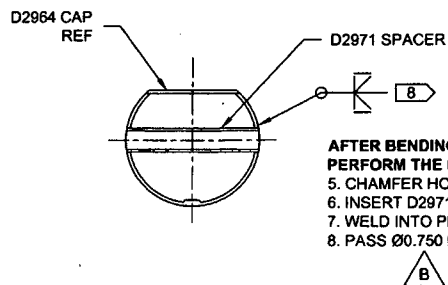
- MATERIAL: MAKE D2966-1 FROM D2962-125 EXTRUSION (INITIAL LENGTH = 125.0)
- FINISH: ACID ETCH, ALDINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2976 WEB.
STANDARD: PRIME (REF. 4.2.1.3.2) AND PAINT MATTE BLACK PER DART QSI 005 4.2
OPTIONAL: POWDER COAT BLACK SANDTEX (REF. 4.3.5.7) PER DART QSI 005 4.3
OPTIONAL: BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS STATED OTHERWISE
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: 18 lb
- WELDING: PER DART QSI 004
- INSERT D2976 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- INSTALL ALS7-1032-130 AFTER FINISH PER SECTION B-B (34 PLACES). DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. SEAL WEARPLATE SCREWS WITH SIKAFLEX-241/-291.
- INSTALL ALS7-1032-130 INSERT, MS27039-1-08 SCREW, AND NAS1149D0332J WASHER IN 2 PLACES THIS LOCATION BEFORE PRIME AND PAINT (OR POWDER COATING).
- DO NOT INSTALL MS27039-1-08 SCREWS AND NAS1149D0332J WASHERS IN THESE LOCATIONS.

B	UPDATE TO CURRENT STD; INCORP. REV. A1 AND A2: CHG COLOR TO BLACK SANDTEX (ZN C3-1) AND ADD D3176-1/-3 (ZN D3-1, C1-2). PRIME AND PAINT NOW STD WHILE POWDER COAT IS OPTIONAL (ZN C3-1); Ø0.875 WAS Ø0.750 (ZN B52-), Ø0.750 WAS Ø0.630 (ZN B6-2); TOL CHG (ZN D8-1 AND D6-1).	MB	13.12.02
A	NEW ISSUE	RF	00.03.08
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>[Signature]</i>		
DRAWN	<i>[Signature]</i>		
CHECKED	<i>[Signature]</i>		
MFG. APPR.	<i>[Signature]</i>		
APPROVED	<i>[Signature]</i>		
DE APPR.	<i>[Signature]</i>		
DATE	13.12.02		
DART AEROSPACE USA, INC KENT, WA DRAWING NO. D2966 TITLE BO 105 SKIDTUBE ASSEMBLY SCALE NTS COPYRIGHT © 2000 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC			



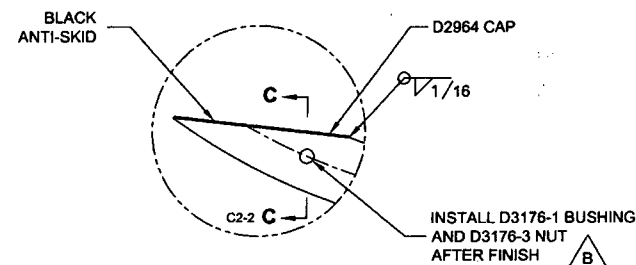
SECTION B-B A6-1
SCALE 6X

**AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.750 HOLES ONLY:**
1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2973 SPACER, 7 PL
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.630 DRILL TO REMOVE SPILL OVER

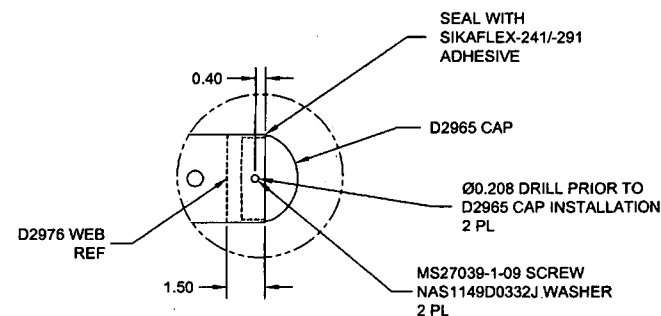


SECTION C-C C2-2
SCALE 6X

**AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.875 HOLES ONLY:**
5. CHAMFER HOLE 0.030 x 45°
6. INSERT D2971 SPACER
7. WELD INTO PLACE AND GRIND FLUSH
8. PASS Ø0.750 DRILL TO REMOVE SPILL OVER



DETAIL A B7-1
SCALE 6X



DETAIL D A4-1
SCALE 4X

DESIGN	<i>[Signature]</i>	DART AEROSPACE USA, INC
DRAWN	<i>[Signature]</i>	KENT, WA
CHECKED	<i>[Signature]</i>	DRAWING NO. D2966
MFG. APPR.	<i>[Signature]</i>	REV. B SHEET 2 OF 2
APPROVED	<i>[Signature]</i>	TITLE BO 105 SKIDTUBE ASSEMBLY
DE APPR.	<i>[Signature]</i>	SCALE NTS
DATE	13.12.02	COPYRIGHT © 2000 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR DISSEMINATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

RELEASED
2014-02-03